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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,536	04/01/2004	John M. Stropki JR.	LEEE 2 00358	1570

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EXAMINER	
KERNS, KEVIN P	

ART UNIT	PAPER NUMBER
1725	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/815,536	STROPKI ET AL.	
	Examiner	Art Unit	
	Kevin P. Kerns	1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 February 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-47,50 and 52-57* is/are pending in the application.

4a) Of the above claim(s) *1-43 and 52-57* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *44-47 and 50* is/are rejected.

7)☒ Claim(s) *47* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 August 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 47 is objected to because of the following informalities: in the 1st line, delete one of the instances of "wherein" after "46". Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 44 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 2 316 244 in view of DE 26 50 522 (complete translation provided with the previous Office Action).

GB 2 316 244 discloses a battery powered electric arc welder, in which the welder includes a welding station, with the welding station including the area adjacent electrodes (12,16) and workpiece W; a rechargeable battery 10 that supplies DC battery voltage; means for recharging the battery (page 1, line 11) that is operable to be powered from an external AC power source, such as the mains, vehicle alternators/dynamos, etc. (page 3, lines 8-10) by use of a connecting cable, or extension cord; a pulse width modulator with a high switching speed converter (a DC up chopper that includes an inductor in combination with a transistor switch and converts from 12V to 36V) coupled to the battery (transistor T having a switching frequency of 10kHz); and a controller (control circuit 14) coupled to the welder with a feedback circuit (page 1, lines 28-31) further coupled with the welding station (abstract; page 1, line 9 through page 4, line 22; and Figures 1 and 2). GB 2 316 244 does not specifically disclose that the battery (or battery packs) and converter are movable on a wheeled carriage.

However, DE 26 50 522 discloses a rollable arc welding trolley for inert gas welding, in which the welding trolley includes a plurality (two or more) of mounted batteries (9,10) that supply DC voltage in individual 12V battery increments to obtain a series of 24V, 36V, 48V etc. battery packs as suitable for the intended welding operation (see last paragraph on page 5; 1st paragraph on page 7; and claims 2 and 3 of translation) and to provide for convenient individual battery recharging and replacement, such that the trolley further includes wheels, for the purpose of providing portability for the welder, while avoiding the requirement of mains electricity connection

during welding, and no welding transformer (abstract; page 3, last paragraph through page 7, 1st paragraph of translation; and Figures 1 and 2).

It would have been obvious to one of ordinary skill in the art at the time the applicants' invention was made to modify the battery powered electric arc welding device, as disclosed by GB 2 316 244, by using a wheeled carriage for a DC voltage welder having battery packs, as taught by DE 26 50 522, in order to provide for convenient individual battery recharging and replacement, and to provide portability for the welder, while avoiding the requirement of mains electricity connection during welding, and no welding transformer (DE 26 50 522; abstract; and page 4, 1st four full paragraphs of translation).

5. Claim 44 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kikuchi et al. (US 5,250,786) in view of DE 26 50 522 (complete translation provided with the previous Office Action).

Kikuchi et al. disclose a DC arc welding apparatus, in which the apparatus includes a welding station, with the welding station including the area adjacent battery-driven welder 10, engine-driven welder 20, and associated electrodes and workpiece(s); a rechargeable battery 11 that supplies DC battery voltage; means for recharging the battery (charging device 19) that is operable to be powered from an external AC power source, such as an output terminal 206 of an alternator 201 (column 5, lines 32-39; and Figure 2) by use of a connecting cable, or extension cord; a pulse width modulator with a high switching speed converter coupled to the battery (a DC chopper control device

18 that is nonspecific with regard to controlling a DC up or down chopper – column 5, lines 18-26; and Figure 2); and a controller (control circuit 105) coupled to the welder with a feedback circuit (column 6, lines 65-68; column 7, lines 1-6; column 8, lines 14-36; and Figure 4) further coupled with the welding station (abstract; column 1, lines 7-11; column 3, lines 30-64; column 4, line 48 through column 7, line 39; column 8, lines 14-36; column 11, lines 26-39; and Figures 1, 2, and 4). Kikuchi et al. do not specifically disclose that the battery (or battery packs) and converter are movable on a wheeled carriage.

However, DE 26 50 522 discloses a rollable arc welding trolley for inert gas welding, in which the welding trolley includes a plurality (two or more) of mounted batteries (9,10) that supply DC voltage in individual 12V battery increments to obtain a series of 24V, 36V, 48V etc. battery packs as suitable for the intended welding operation (see last paragraph on page 5; 1st paragraph on page 7; and claims 2 and 3 of translation) and to provide for convenient individual battery recharging and replacement, such that the trolley further includes wheels, for the purpose of providing portability for the welder, while avoiding the requirement of mains electricity connection during welding, and no welding transformer (abstract; page 3, last paragraph through page 7, 1st paragraph of translation; and Figures 1 and 2).

It would have been obvious to one of ordinary skill in the art at the time the applicants' invention was made to modify the battery powered electric arc welding apparatus, as disclosed by Kikuchi et al., by using a wheeled carriage for a DC voltage welder having battery packs, as taught by DE 26 50 522, in order to provide for

convenient individual battery recharging and replacement, and to provide portability for the welder, while avoiding the requirement of mains electricity connection during welding, and no welding transformer (DE 26 50 522; abstract; and page 4, 1st four full paragraphs of translation).

6. Claims 46, 47, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 2 316 244 in view of DE 26 50 522 (complete translation provided with the previous Office Action), as applied to claims 44 and 45 above, and further in view of Baker (US 5,864,116).

GB 2 316 244 (in view of DE 26 50 522) disclose and/or suggest the features of claims 44 and 45. Neither GB 2 316 244 nor DE 26 50 522 specifically discloses that the pulse width modulator operates at a frequency of 20kHz and that the high switching speed converter is a DC down chopper.

However, Baker discloses a DC chopper with inductance control for welding, in which the pulse width modulator operates at a frequency of 20kHz and the chopper 10 is a multi-stage DC down chopper for use in arc welding, such that the chopper includes a DC input source, 1st and 2nd switching stages, 1st and 2nd switch devices, and 1st and 2nd chokes, such that the combination of pulse width modulation at 20kHz in combination with the DC down chopper is advantageous for providing a minimum current override feedback circuit, whereby the current in the welding operation never decreases below a given set current level, thus allowing the welding arc to remain

stable (abstract; column 1, lines 4-8; column 2, line 37 through column 4, line 58; column 5, lines 45-67; column 6, lines 1-67; and Figure 1).

It would have been obvious to one of ordinary skill in the art at the time the applicants' invention was made to modify the battery powered electric arc welding device, as disclosed by GB 2 316 244, by using a wheeled carriage for a DC voltage welder having battery packs, as taught by DE 26 50 522, in order to provide for convenient individual battery recharging and replacement, and to provide portability for the welder, while avoiding the requirement of mains electricity connection during welding, and no welding transformer, and by further using pulse width modulation at 20kHz in combination with a DC down chopper, as disclosed by Baker, in order to provide a minimum current override feedback circuit, whereby the current in the welding operation never decreases below a given set current level, thus allowing the welding arc to remain stable (Baker; abstract; column 3, lines 40-48; and column 4, lines 37-58).

7. Claims 46, 47, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kikuchi et al. (US 5,250,786) in view of DE 26 50 522 (complete translation provided with the previous Office Action), as applied to claims 44 and 45 above, and further in view of Baker (US 5,864,116).

Kikuchi et al. (in view of DE 26 50 522) disclose and/or suggest the features of claims 44 and 45. Neither Kikuchi et al. nor DE 26 50 522 specifically discloses that the pulse width modulator operates at a frequency of 20kHz and that the high switching speed converter is a DC down chopper.

However, Baker discloses a DC chopper with inductance control for welding, in which the pulse width modulator operates at a frequency of 20kHz and the chopper 10 is a multi-stage DC down chopper for use in arc welding, such that the chopper includes a DC input source, 1st and 2nd switching stages, 1st and 2nd switch devices, and 1st and 2nd chokes, such that the combination of pulse width modulation at 20kHz in combination with the DC down chopper is advantageous for providing a minimum current override feedback circuit, whereby the current in the welding operation never decreases below a given set current level, thus allowing the welding arc to remain stable (abstract; column 1, lines 4-8; column 2, line 37 through column 4, line 58; column 5, lines 45-67; column 6, lines 1-67; and Figure 1).

It would have been obvious to one of ordinary skill in the art at the time the applicants' invention was made to modify the battery powered electric arc welding apparatus, as disclosed by Kikuchi et al., by using a wheeled carriage for a DC voltage welder having battery packs, as taught by DE 26 50 522, in order to provide for convenient individual battery recharging and replacement, and to provide portability for the welder, while avoiding the requirement of mains electricity connection during welding, and no welding transformer, and by further using pulse width modulation at 20kHz in combination with a DC down chopper, as disclosed by Baker, in order to provide a minimum current override feedback circuit, whereby the current in the welding operation never decreases below a given set current level, thus allowing the welding arc to remain stable (Baker; abstract; column 3, lines 40-48; and column 4, lines 37-58).

Response to Arguments

8. The examiner acknowledges the applicants' Appeal Brief received by the USPTO on February 16, 2007. A new claim objection to claim 47 is noted (see above section 1). A complete translation of DE 26 50 522 was provided with the final rejection mailed August 24, 2006. Claims 1-43 and 52-57 remain withdrawn from consideration as drawn to non-elected inventions. Claims 44-47 and 50 remain under consideration in the application.

9. Applicants' arguments with respect to claims 44-47 and 50 have been considered but are moot in view of the new ground(s) of rejection, with the exception of the response to arguments that still apply as follows.

With regard to the applicants' remarks/arguments on pages 3-8 of the Appeal Brief, it is noted that the same prior art references as previously set forth continue to apply, but are now presented in different combinations (see above sections 4-7). For example, contrary to the applicants' argument in the paragraph bridging pages 4 and 5 of the brief, GB 2 316 244 and Kikuchi et al. individually disclose a pulse width modulator with a high switching speed converter in the form of a DC chopper (see above sections 4 and 5). Upon further analysis of the final rejection mailed August 24, 2006 and its prior art references, the only missing element from independent claim 44 is the use of a wheeled carriage for a DC welder having the remaining claimed features regarding its circuitry. As a result, DE 26 50 522 has been provided to show a DC welder that is movable on a wheeled carriage, with the motivation for combining with the

primary references being for improved portability of the welder (see above sections 4 and 5). Instead, the applicants have generally attacked the references individually, without substantial consideration regarding that one of ordinary skill in the welding art would use a welder being movable on a wheeled carriage (DE 26 50 522) to improve its portability. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kevin P. Kerns whose telephone number is (571) 272-1178. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kevin P. Kerns Kevin Kerns 5/10/07
Primary Examiner
Art Unit 1725

KPK
kpk
May 10, 2007